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A PRELIMINARY ANALYSIS OF TRUCK TRAFFIC PATTERNS
IN NORTH VIETNAM AND COMMUNIST-HELD PORTIONS OF LAOS

Prepared by the
Central Intelligence Agency
and the
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GROUP I
Excluded from automatic down-
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SUBJECT: A PRELIMINARY ANALYSIS OF TRUCK TRAFFIC PATTERNS IN NORTH VIETNAM
AND COMMUNIST-HELD PORTIONS OF LAOS

THE PROBLEM

To assess the truck traffic patterns in North Vietnam and Communist-held portions of Laos as these patterns may relate to the logistic support intended for Communist units in Laos and for the Viet Cong in South Vietnam, and to evaluate the adequacy of photographic and other coverage of this traffic.

SOURCES OF INTELLIGENCE

Truck traffic patterns revealed in aerial photography obtained during the period 6 March through 10 April 1964 and reports of road watch teams during the period 8 March through 9 April 1964 form the principal basis of this analysis. Field reports of photography as late as 3 May 1964 have been scanned, but have not been incorporated in this analysis.

INTELLIGENCE BEARING ON THE PROBLEM

1. Roads leading from North Vietnam to Laos are used to supply the estimated 11,200 Communist troops deployed in the southern provinces of Khammouane, Savannakhet, Saravane, and Attapeu and the 11,800 troops located in the northern provinces of Luang Prabang, Xieng Khouang, and Vientiane. The forces in the southern provinces of Laos require, at present levels of activity, supplies amounting to 18 to 30 short tons or 6 to 10 truckloads daily. The

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troops in the northern provinces require 45 to 60 short tons, or 15 to 20 truckloads daily because of the greater activity in that area.

2. The capacities of the roads leading from North Vietnam to Laos greatly exceed these requirements. During the dry season (November through April) the roads within Laos also have capacities far in excess of present supply requirements of Communist forces in Laos, but during the rainy season great difficulties are encountered in moving supplies to the southern provinces. The main supply route for the northern provinces is capable of meeting current supply requirements throughout the year. (See map at annex).

CONCLUSIONS

A. Aerial photography and reports from road watchers show truck activity of sufficient magnitude to confirm the identification of the principal roads used to supply Communist forces in Laos. These roads are: route 7 from its junction with route 1 in North Vietnam to the Plaine des Jarres, and route 12, route 12A, and route 12B leading from route 1 to the southern provinces of Laos. (See Annex A and the map at annex). The apparent heavy activity on route 1 from Vinh south to the Demarcation Zone in North Vietnam probably is associated principally with economic activity in the northern portion of that route. (See Annex B).

B. There have not been a sufficient number of samples of truck activity on the various routes to estimate with a high degree of confidence the

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magnitude of the supply activity over the routes. In the 36 days sampled, individual routes were observed from 10 to 23 times, but 50 percent coverage of the routes was achieved on only 4 to 19 days. The two most important routes, 7 and 12, received 50 percent or better coverage on only 4 and 5 days respectively. (See Annex C). If the days on which we have reasonably complete photographic coverage could be regarded as representative, the truck traffic entering Laos from North Vietnam is more than adequate to meet the supply requirements of Communist forces in Laos. The photography does not permit a similar conclusion for the supply routes in southern Laos---routes 12A, 12A/B, 12B, 9, and 23.

C. We believe, therefore, that more complete aerial photography could provide the basis for reasonably accurate estimates of the supply activity in this area. More frequent coverage should be concentrated on routes 7, 12, 12A, 12A/B, 12B, 9, and 23. Road watchers are an essential supplement to aerial photography because convoys have been known to move at night. Low-level photography during the rainy season also would be desirable.

D. With respect to the logistic support intended for Communist units in Laos and for the Viet Cong in South Vietnam, we are able to conclude from the preliminary analysis only the following:

1. There appears to be considerable truck activity on route 7, which provides support exclusively for the Communists in northern Laos.
2. There also is considerable truck activity on route 12, which is the northern portion of the road that supplies the Communist forces in

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southern Laos and which represents one land route for the supply of the Viet Cong in South Vietnam. Information on routes south of route 12, however, is so incomplete that we are unable to estimate with confidence whether the activity is in excess of the daily supply requirements of Communist forces in Laos, whether it represents stockpiling of supplies in advance of the rainy season when road movements become most difficult, or whether it is of sufficient size to provide daily and stockpiling requirements with a surplus for the Viet Cong.

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DISCUSSION

1. NPIC analysis of sporadic aerial photography flown during the period 6 March through 10 April has revealed truck traffic patterns on roads leading from North Vietnam to Khammouane, Savannakhet, Saravane, and Attapeu*, the four southern provinces of Laos, within which it is estimated that 11,200 Communist troops are deployed. The three southernmost provinces are the ones from which it is believed that supplies are infiltrated over trails to the Viet Cong in South Vietnam. Road-watch teams have also sporadically reported truck convoys moving over some of the same roads. These same sources also have revealed truck traffic patterns on the major route used to supply an additional 11,800 troops located in the ^{northern} southern provinces of Laos, Luang Prabang, Xieng Khouang, and Vientiane.

2. The purpose of the truck traffic analysis is to attempt to determine whether our sources of information are adequate to indicate the significance of these patterns, namely: (a) Do they confirm other sources of intelligence on the routes actually being used for the supply of forces in Laos? (b) What is the volume of traffic? (c) Is the volume of traffic in excess of the daily supply requirements? (d) Is the volume and pattern of traffic such as to indicate stockpiling of supplies for forces in Laos, or of such character as to indicate that there is an increase in the overland supply of the Viet Cong in South Vietnam?

* Not shown on map. An estimated 1,950 Communist troops are located in Attapeu.

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3. The reports on truck traffic have been sufficient to confirm the use of the various routes for the supply of the southern provinces. These are routes 8 and 12 from their junctions with route 1 in North Vietnam thence 12A, 12B, and 9. Route 7 from its junction with route 1 in North Vietnam is confirmed as a main supply route for the northern provinces of Laos. (See map at annex).

4. The portion of route 12 to the junction with route 12A in Laos is the beginning of the supply line for most of the ~~6~~6,800 troops in the three southernmost provinces. It is estimated that a daily average of four to six trucks must cross into Laos on the route to meet the requirements of the troops in these provinces. The road capacity in its limiting sector is estimated to be about 130 trucks each way per day in the dry season (August to April) and 33 trucks each way per day in the rainy season. Thus the capacity of the road is far in excess of the average daily traffic requirement and it is not necessary for trucks to move on this route each day. In the dry season the road is capable of sustaining large convoys of vehicles moving over the route at one time that could supply the military units dependent on this route for as long as 2 weeks.

5. Photographic coverage of route 12 in March and April included only five missions during which at least 50 percent of the route was covered. This limited photography revealed three possible convoys moving to Laos---one of 16 trucks on 6 March, one of 49 trucks on 3 April and one of 15 unidentified vehicles on 6 April. In addition, 27 trucks were found moving in the

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opposite direction on 15 March. (See the tables at annex). Preliminary field reports of photography taken on 3 May reveal two groups of trucks headed south, one containing 38 trucks and another, 25 trucks. Trucks were also photographed at the Bai Due Thon staging area located on this route 24 miles from the Laos border: 50 on 6 March, 35 on 5 April and 65 on 3 May. The number of trucks observed on this route is greater than the traffic on any route in Laos for which we have aerial photography, except on route 7 (see below). There are no road-watch reports for this route. If the days on which we have reasonably complete photographic coverage can be regarded as representative, the truck traffic is far in excess of the supply traffic needed in the southern provinces of Laos.

6. The convoys probably start their trip into Laos from the Bai Due Thon staging area in the early morning and move at least to the junction of route 12 and 12A where a rest and refueling area is located. From there, most of the onward movement of trucks is almost certainly down route 12A. Photography of the portion of route 12 beyond the junction with route 12A has not revealed much truck traffic (See the tables at annex).

7. Route 12A provides a continuation of the supply line into southern Laos. During the dry season the capacity of this route is the same as the limiting section on route 12, but during the rainy season the route is estimated to sustain very little traffic. Consequently, considerable supplies must be stockpiled during the dry season so that they will be available for the troops served by this route during the rainy season. Photography during the

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entire period 6 March to 10 April included only five missions with more than 50 percent coverage of the route. This photography revealed only one convoy of 13 trucks moving south and one of 18 trucks moving north, both on 15 March. (See Annex B). Three large convoys reported by road-watch teams were not discovered by photography. According to these reports, one convoy of 63 trucks moved south on 8 March and another of 47 trucks moved south on the 25th. All but five of these trucks were said to be loaded with troops rather than supplies. The other convoy of 62 trucks moved north on the 18th of March. Although the convoys observed in photography were large in terms of the daily supply requirements for the troops deployed in this part of Laos, the samples of photography are too small to conclude that more supplies are moving down 12A than are needed for stockpiling or for the troops in Laos.

8. Some trucks moving down route 12A continue on 12A/B thence 12B or 12A and to route 9, the most important part of which extends from Muong Phine to the South Vietnam border. On route 9 they serve the Ban Thay storage area a few miles east of Muong Phine, the barracks and supply area at Muong Phine, and the Tchepone Complex which is also a barracks, supply, and storage area. Route 9 has an estimated capacity of 300 trucks each way during the dry season and 100 during the rainy season. Photographic coverage of route 9 has been far more extensive than for any other route discussed in this memorandum except route 23. Very few trucks have been revealed by photography on the route east of Muong Phine, and only one truck was observed on route 9 between Muong Phine and the junction with route 12B.

9. The final route on which aerial photography is available in southern

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Laos is route 23 from its junction with route 9 to Saravane. The Communists control only the northern portion of the route, thus it cannot be used for through movements to the Attapeu area. The capacity of the route is estimated at 130 trucks each way per day during the dry season but it would have very limited capacity for truck movements during the rainy season. Although the route has been covered well on a large number of missions during March and April only one truck was sighted. It was headed south in Communist-held territory on 15 March.

10. Route 1 south of Vinh to the Demarcation Line serves North Vietnamese troops estimated to be in excess of 10,000 men, serves the reconstruction taking place on the rail line south of Vinh, and serves the construction at Dong Hoi and the port of Quang Khe, which is located at the mouth of the Nguon Nay River. The limiting sector of the route has an estimated capacity of 250 trucks each way in the dry season and 33 each way in the rainy season. Photographic coverage of the area revealed considerable numbers of trucks along this route in March, but one mission in April with coverage of most of the area revealed very few trucks. Most of the trucks were located near the ports of Dong Hoi and Quang Khe. It is impossible to account for this difference between the various missions.

11. The routes not directly associated with movement of supplies to southern Laos are 8, 8A, and 7. Route 8 extends from Vinh in North Vietnam to Lak Sao in Laos serving 4,400 troops located in Khammouane Province. Route 8A merely serves as a connection between route 8 and route 12, but is believed to be in

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very poor condition at present. Route 7 is the main supply route for the northern provinces of Laos.

12. From two to four trucks per day are required to supply the troops in the Lak Sao area served by route 8. These supplies are in addition to those moved to the southern provinces on route 12. The limiting sector of this route has an estimated capacity of 100 trucks each way per day in the dry season and very few per day during the rainy season. Although a fairly large number of missions were flown over portions of the route, none were flown over its entire length. No truck convoys were sighted, and only a small number of individual trucks were seen during the entire period. More trucks were sighted during the 10 days in April than in the 23 days in March, with a maximum for 1 day of five trucks on 6 April. A road-watch team reported that a convoy of 100 trucks entered Laos loaded with food and ammunition on 3 February 1964 and returned to North Vietnam the same day. Photography revealed only two trucks on route 8A in March and none in April. Although the coverage was scanty, it was generally as good as or better than that available for most of the other routes, indicating that there is probably very little traffic moving between routes 8 and 12.

13. Route 7 is the major route used to supply about 11,800 troops located in Luang Prabang, Xieng Khouang, and Vientiane Provinces of Laos. It is estimated that their resupply requirements could be carried by 15 to 20 trucks per day. The limiting sectors of route 7 have an estimated capacity of 100 trucks each way per day in the dry season and 33 per day in the rainy season.

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This capacity is greater than the requirement for supplies, even in the rainy season. It is not necessary, therefore, for the trucks to move every day; they can be grouped into convoys. On 14 March a road-watch team reported a convoy of 200 trucks moving west in Laos toward Ban Ban. If these trucks carried supplies, the amount delivered by the convoy would have been sufficient for more than 10 days. Photographic coverage of the route is not sufficient to determine with confidence the total number of trucks moving on the route. The only mission flown in March that covered the entire route (with partial or scattered clouds) revealed 100 parked trucks and 15 trucks heading west. No other photography was obtained during March with sufficient coverage of the route to confirm the 200-truck convoy on 14 March or to reveal any other large convoys. Photography taken during 1-10 April revealed a higher level of traffic than that during March. This statement must be qualified with the fact that only one mission with good coverage of the route is available for each month. The mission flown on 4 April spotted 47 trucks moving west toward Ban Ban and spotted 72 possible parked trucks. The same mission located 7 possible tanks and at least 28 trucks on the route beyond Ban Ban. This photography coincides to some extent with a road-watch team's report of 236 trucks heading west on route 7 during 6-9 April. On the basis of the above information, it is possible to conclude that truck traffic on route 7 is more active than that on any other route discussed in this memorandum. If more photography of the route were available with better and more frequent reports from road-watch teams, it is possible than an estimate of the total volume of supplies moved during a certain period of time could be made.

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